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EDUCATION **Ph.D., Systems Engineering** **University of Virginia, 2011**
Advisor: **Alfredo Garcia**

M. A. Sc., Electrical Engineering **Stony Brook University, 2007**
Advisors: **Petar Djurić** and **Monica Bugallo**

B. Eng., Electrical Engineering **Zhejiang University, 2005**

ACADEMIC **University of Minnesota** **8/2017–Present**

EMPLOYMENT Assistant Professor
Dept. of Electrical and Computer Engineering

Iowa State University **8/2014–7/2017**

Assistant Professor
Dept. of Industrial and Manufacturing Systems Engineering
Dept. of Electrical and Computer Engineering (by courtesy)

University of Minnesota **7/2011–8/2014**

Post-Doctoral Fellow and Research Assistant Professor
Dept. of Electrical and Computer Engineering

HORNORS AND AWARDS

1. The Black & Veatch Faculty Fellow, Iowa State University, 2014-2017
2. Finalist, Best Paper Prize for Young Researchers in Continuous Optimization, the Mathematical Optimization Society 2013, 2016

FUNDED PROJECT

1. **PI**, “Decomposition Framework for Non-convex Nonsmooth Optimization with Applications in Data Analytics”, NSF, Grant No. CMMI-1727757, 2017-2021, \$426,765 out of total \$426,765
2. **PI**, “Optimal Provision of Backhaul and Radio Access Networks: A Cross-Network Approach”, NSF, Grant No. CCF-1526078, 2015-2018, \$180,000 out of total \$490,000
3. **PI**, “Mechanism Design for Complex Systems: A Black-box Model Approach”, Air Force Office of Scientific Research (AFOSR), Grant No. 15RT0767, 2015-2019, \$200,000 out of total \$453,000
4. **PI**, “Distributed Inverter Controllers Seeking Reliability and Economic-Optimality of Photovoltaic-Dominant Distribution Systems”, National Renewable Energy Lab (NREL) LDRD Program, 2015-2017, \$90,000 out of total \$454,000
5. **PI**, Black & Veatch Faculty Fellow, Iowa State University, 2014 - 2017, \$21,000

TEACHING

1. Fall 2017, *EE 5239 Nonlinear Programming*
2. Spring 2017, *IE 631 Nonlinear Programming*
3. Fall 2016, 2014, *IE 312 Optimization*
4. Spring 2016, 2015, *IE 487/587 Big Data Optimization*
5. Fall 2015, *IE 341 Production System*

PATENTS

1. R. Sun, **M. Hong**, M. Baligh, Z.-Q. Luo, M. Razaviyayn, “System and Method for Transmission Point (TP) Association and Beamforming Assignment in Heterogeneous Networks”, US 20130201937 A1
2. W.-C. Liao, **M. Hong**, Z.-Q. Luo, H. Farmanbar, X. Li, H. Zhang, “System and Method for Joint Power Allocation and Routing for Software Defined Networks”, US 20150119050
3. N. Zhang, W.-C. Liao, **M. Hong**, H. Baligh and Z.-Q. Luo, “Systems and Methods for Performing Traffic Engineering In a Communications Network”, International Patent Application No. PCTIB2016051777

SELECTED PUBLICATIONS BY AREA

Mathematical Optimization

- **Mingyi Hong**, “Decomposing Nonconvex Problems Using a Proximal Primal-Dual Approach: Algorithms, Convergence, and Applications”, preprint, available at <https://arxiv.org/abs/1604.00543>, 2016
- **Mingyi Hong**, “A Distributed, Asynchronous and Incremental Algorithm for Nonconvex Optimization: An ADMM Based Approach”, accepted, **IEEE Transactions on Control of Network Systems**, available at <http://xxx.tau.ac.il/pdf/1412.6058v1.pdf>, 2015
- Ruoyu Sun and **Mingyi Hong**, “Improved Iteration Complexity Bounds of Cyclic Block Coordinate Descent for Convex Problems,” preprint, available at <http://arxiv.org/abs/1512.04680>, 2015
- **Mingyi Hong** and Zhi-Quan Luo, “On the Linear Convergence of the Alternating Direction Method of Multipliers”, accepted, **Mathematical Programming Series A** [Online] <http://arxiv.org/abs/1208.3922>, 2016
- **Mingyi Hong**, Xiangfeng Wang, Meisam Razaviyayn and Zhi-Quan Luo, “Iteration Complexity Analysis of Block Coordinate Descent Methods”, accepted, **Mathematical Programming Series A** [Online] <http://arxiv.org/abs/1310.6957>, 2016
- **Mingyi Hong**, Zhi-Quan Luo and Meisam Razaviyayn, “Convergence Analysis of Alternating Direction Method of Multipliers for a Family of Nonconvex Problems”, **SIAM Journal on Optimization**, Vol. 26, No. 1, pages 337 - 364, 2016; **Finalist, Best Paper Prize for Young Researchers in Continuous Optimization, 2016**
- Meisam Razaviyayn, **Mingyi Hong** and Zhi-Quan Luo, “A Unified Convergence Analysis of Block Successive Minimization Methods for Nonsmooth Optimization”, **SIAM Journal on Optimization**. Vol. 23, No. 2, pages 1126 - 1153, 2013; **Finalist, Best Paper Prize for Young Researchers in Continuous Optimization, 2013**
- Zi Xu, **Mingyi Hong**, and Zhi-Quan Luo, “Semidefinite approximation for mixed binary quadratically constrained quadratic programs”, **SIAM Journal on Optimization**, Vol. 24, No. 3, pages, 1265 - 1293, 2014

Machine Learning & Data Analytics

- Xiao Fu, Kejun Huang, Nicholas D. Sidiropoulos, Qingjiang Shi and **Mingyi Hong**, “Anchor-Free Correlated Topic Modeling”, submitted to **IEEE Transactions on Pattern Analysis and Machine Intelligence**, October 2016.
- Bo Yang, Xiao Fu, Nicholas D. Sidiropoulos and **Mingyi Hong**, “Towards K-means-friendly Spaces: Simultaneous Deep Learning and Clustering”, **Proc. ICML 2017**.
- Xiao Fu, Kejun Huang, **Mingyi Hong**, Nicholas D. Sidiropoulos, and Anthony Mancho So. “Scalable and Optimal Generalized Canonical Correlation Analysis via Alternating Optimization”, accepted, **IEEE Transactions on Signal Processing**, available at <http://arxiv.org/abs/1605.09459>, March 2017.

- Xingguo Li, Jarvis Haupt, Raman Arora, Han Liu, **Mingyi Hong**, Tuo Zhao, “A First Order Free Lunch for SQRT-Lasso”, manuscript, available at <http://arxiv.org/abs/1605.07950>, May 2016
- **Mingyi Hong***, Meisam Razaviyayn*, Zhi-Quan Luo and Jong-Shi Pang, “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, **Feature Article, IEEE Signal Processing Magazine** (*equal contribution), Vol. 33, No. 1, pages 57 - 77, Jan. 2016
- Davood Hajinezhad, **Mingyi Hong**, Tuo Zhao and Zhaoran Wang, “NESTT: A Nonconvex Primal-Dual Splitting Method for Distributed and Stochastic Optimization”, **Proc. NIPS 2016**, (acceptance rate 22.7%)
- Ruoyu Sun* and **Mingyi Hong***, “Improved Iteration Complexity Bounds of Cyclic Block Coordinate Descent for Convex Problems”, **Proc. NIPS 2015** (*equal contribution, acceptance rate %21.92)
- Meisam Razaviyayn, **Mingyi Hong**, Zhi-Quan Luo and Jong-Shi Pang, “Parallel Successive Convex Approximation for Nonsmooth Nonconvex Optimization”, **Proc. NIPS 2014**, (acceptance rate %24.67)

Signal and Information Processing

- Qingjiang Shi, Haoran Sun, Songtao Lu, **Mingyi Hong** and Meisam Razaviyayn, “Inexact Block Coordinate Descent Methods For Symmetric Nonnegative Matrix Factorization”, accepted, **IEEE Transactions on Signal Processing**; available at <http://arxiv.org/abs/1607.03092>, 2016
- Alfredo Garcia and **Mingyi Hong**, “Efficient Rate Allocation in Wireless Networks Under Incomplete Information”, **IEEE Transactions on Automatic Control**, Vol. 61, No. 5, pages 1397 - 1402, 2016
- Tsung-Hui Chang, **Mingyi Hong** and Xiangfeng Wang, “Multi-Agent Distributed Optimization via Inexact Consensus ADM”, **IEEE Transactions on Signal Processing**, Vol. 63, No. 2, pages 482-497, 2015
- M. Baligh, **M. Hong**, W.-C Liao, Z.-Q Luo, M. Razaviyayn, M. Sanjabi, and R. Sun, “Cross-Layer Provisioning of Future Cellular Networks”, **IEEE Signal Processing Magazine**, special issue on 5G revolution, Vol. 31, No. 6, pages 56-68, 2014
- **Mingyi Hong**, Ruoyu Sun, Hadi Baligh and Zhi-Quan Luo, “Joint Base Station Clustering and Beamformer Design for Partial Coordinated Transmission in Heterogeneous Networks”, **IEEE Journal on Selected Areas in Communications**, special issues on Large-Scale multiple antenna systems, Vol. 31, No. 2, pages 226-240, 2013

FULL

PUBLICATIONS

Book Chapters

1. **Mingyi Hong** and Zhi-Quan Luo, “Signal Processing and Optimal Resource Allocation for the Interference Channel”, **Academic Press Library in Signal Processing**, Elsevier, 2013
2. **Mingyi Hong**, Wei-Cheng Liao, Ruoyu Sun and Zhi-Quan Luo, “Optimization Algorithms for Big Data with Application in Wireless Networks”, **Big Data Over Networks**, Cambridge University Press, 2014

Journal Papers (Submitted/Under review)

1. Davood Hajinezhad and **Mingyi Hong**, “Perturbed Proximal Primal Dual Algorithm for Nonconvex Nonsmooth Optimization”, submitted for publication, Nov. 2017.
2. Haoran Sun, Xiangyi Chen, Qingjiang Shi, **Mingyi Hong**, Xiao Fu, and Nicholas D. Sidiropoulos, “Learning to Optimize: Training Deep Neural Networks for Wireless Resource Management” submitted for publication, available at <https://arxiv.org/abs/1705.09412>.

3. Davood Hajinezhad, **Mingyi Hong** and Alfredo Garcia, “Zeroth Order Nonconvex Multi-Agent Optimization over Networks”, submitted for publication, Mar. 2017
4. Qingjiang Shi, and **Mingyi Hong**, “Spectral Efficiency Optimization For Millimeter Wave Multi-User MIMO Systems”, submitted for publication, October 2016.
5. Xiao Fu, Kejun Huang, Nicholas D. Sidiropoulos, Qingjiang Shi and **Mingyi Hong**, “Anchor-Free Correlated Topic Modeling”, submitted for publication, October 2016.
6. Xingguo Li, Jarvis Haupt, Raman Arora, Han Liu, **Mingyi Hong**, Tuo Zhao, “A First Order Free Lunch for SQRT-Lasso”, submitted for publication, available at <http://arxiv.org/abs/1605.07950>, 2016
7. Ruoyu Sun and **Mingyi Hong**, “Improved Iteration Complexity Bounds of Cyclic Block Coordinate Descent for Convex Problems,” submitted for publication, available at <http://arxiv.org/abs/1512.04680>, 2015
8. **Mingyi Hong**, Tsung-Hui Chang, Xiangfeng Wang, Meisam Razaviyayn , Shiqian Ma and Zhi-Quan Luo, “A Block Successive Upper Bound Minimization Method of Multipliers for Linearly Constrained Convex Optimization”, submitted for publication, available at http://www.optimization-online.org/DB_HTML/2014/01/4215.html, 2014
9. Hung-Wei Tseng, **Mingyi Hong**, Srikanth Vishnubhotla, Xiangfeng Wang, Jinjun Xiao, Tao Zhang, and Zhi-Quan Luo, “Wiener Filtering and Sparse NMF: A New Approach for Single Channel Speech Enhancement”, submitted for publication, 2015.
10. Hung-Wei Tseng, **Mingyi Hong** and Zhi-Quan Luo, “Monaural Speech Enhancement: Estimating Ideal Ratio Mask by Sparse NMF and DNN”, submitted for journal publication, 2015

Journal Papers (Published/Accepted)

1. Nan Zhang, Ya-Feng Liu, Hamid Farmanbar, Tsung-Hui Chang, **Mingyi Hong**, and Zhi-Quan Luo, “Network Slicing for Service-Oriented Networks Under Resource Constraints”, accepted by **IEEE Journal on Selected Areas in Communication**, Special issue on Emerging Technologies in Software-Driven Communication Aug. 2017.
2. Wei-Cheng Liao, **Mingyi Hong**, Hamid Farmanbar, and Zhi-Quan Luo, “A Distributed Semi-Asynchronous Algorithm for Network Traffic Engineering” accepted, **IEEE Transactions on Signal and Information Processing over Networks**, 2017.
3. Qingjiang Shi, Haoran Sun, Songtao Lu, **Mingyi Hong** and Meisam Razaviyayn, “Inexact Block Coordinate Descent Methods For Symmetric Nonnegative Matrix Factorization”, accepted, **IEEE Transactions on Signal Processing**, 2017; available at <http://arxiv.org/abs/1607.03092>, 2016
4. Songtao Lu, **Mingyi Hong** and Zhengdao Wang, “A Nonconvex Splitting Method for Symmetric Nonnegative Matrix Factorization: Convergence Analysis and Optimality”, accepted, **IEEE Transactions on Signal Processing**, 2017
5. Xiao Fu, Kejun Huang, **Mingyi Hong**, Nicholas D. Sidiropoulos, and Anthony Man-Cho So. “Scalable and Optimal Generalized Canonical Correlation Analysis via Alternating Optimization”, accepted, **IEEE Transactions on Signal Processing**, available at <http://arxiv.org/abs/1605.09459>, 2017
6. Yijian Zhang, **Mingyi Hong**, Emiliano Dall’Anese, Sairaj Dhople, and Zi Xu, “Distributed Controllers Seeking AC Optimal Power Flow Solutions Using ADMM”, accepted, **IEEE Transactions on Smart Grid**, 2017
7. **Mingyi Hong**, “A Distributed, Asynchronous and Incremental Algorithm for Nonconvex Optimization: An ADMM Based Approach”, accepted, **IEEE Transactions on Control of Network Systems**, available at <http://xxx.tau.ac.il/pdf/1412.6058v1.pdf>, 2016

8. **Mingyi Hong** and Tsung-Hui Chang, “Stochastic Proximal Gradient Consensus Over Random Networks”, accepted, **IEEE Transactions on Signal Processing**, available at <http://arxiv.org/abs/1511.08905>, 2016
9. Mingmin Zhao, Yunlong Cai, Qingjiang Shi, **Mingyi Hong**, and Benoit Champagne, “Joint Transceiver Designs for Full-Duplex K-Pair MIMO Interference Channel with SWIPT”, accepted, **IEEE Transactions on Communication**, 2016
10. **Mingyi Hong** and Zhi-Quan Luo, “On the Linear Convergence of the Alternating Direction Method of Multipliers”, accepted, **Mathematical Programming Series A** [Online] <http://arxiv.org/abs/1208.3922>, 2016
11. **Mingyi Hong**, Xiangfeng Wang, Meisam Razaviyayn and Zhi-Quan Luo, “Iteration Complexity Analysis of Block Coordinate Descent Methods”, accepted, **Mathematical Programming Series A** [Online] <http://arxiv.org/abs/1310.6957>, 2016
12. Qingjiang Shi, **Mingyi Hong**, Enbin Song, Yunlong Cai, Weiqiang Xu, Xiqi Gao, “Joint Source-Relay Design for Full-Duplex MIMO AF Relay Systems”, accepted, **IEEE Transactions on Signal Processing**, 2016
13. Ya-Feng Liu, **Mingyi Hong** and Enbin Song, “Sample Approximation Based Deflation Approaches for Chance Constrained Joint Power and Admission Control”, accepted, **IEEE Transactions on Wireless Communication**, Vol. 15, No. 7, pages 4535 - 4547, 2016
14. Tsung-Hui Chang, **Mingyi Hong** and Xiangfeng Wang, “Asynchronous Distributed ADMM for Large-Scale Optimization- Part I: Algorithm and Convergence Analysis”, **IEEE Transactions on Signal Processing**, Vol. 64, No. 12, pages 3118 - 3130, 2016
15. Tsung-Hui Chang, Wei-Cheng Liao, **Mingyi Hong** and Xiangfeng Wang, “Asynchronous Distributed ADMM for Large-Scale Optimization- Part II: Linear Convergence Analysis and Numerical Performance”, **IEEE Transactions on Signal Processing**, Vol. 64, No. 12, pages 3131 - 3144, 2016
16. Brendan Ames and **Mingyi Hong**, “Alternating direction method of multipliers for sparse zero-variance discriminant analysis and principal component analysis”, **Computational Optimization and Applications**, Vol. 64, No. 3, pages 725-754, 2016
17. **Mingyi Hong**, Zhi-Quan Luo and Meisam Razaviyayn, “Convergence Analysis of Alternating Direction Method of Multipliers for a Family of Nonconvex Problems”, **SIAM Journal on Optimization**, Vol. 26, No. 1, pages 337 - 364, 2016; **Finalist, Best Paper Prize for Young Researchers in Continuous Optimization, 2016**
18. Qingjiang Shi, Meisam Razaviyayn **Mingyi Hong**, and Zhi-Quan Luo, “SINR Constrained Beamforming for a MIMO Multi-user Downlink System”, **IEEE Transactions on Signal Processing**, Vol. 64, No. 11, pages 2920-2933, 2016
19. **Mingyi Hong**, Qiang Li and Ya-Feng Liu, “Decomposition by Successive Convex Approximation: A Unifying Approach for Linear Transceiver Design in Heterogeneous Networks”, **IEEE Transactions on Wireless Communication**, No. 15, Vol. 2, pages 1377-1392, 2016
20. **Mingyi Hong***, Meisam Razaviyayn*, Zhi-Quan Luo and Jong-Shi Pang, “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, **Feature Article, IEEE Signal Processing Magazine** (*equal contribution), Vol. 33, No. 1, pages 57 - 77, Jan. 2016
21. Qingjiang Shi, Cheng Peng, Weiqiang Xu, **Mingyi Hong**, Yunlong Cai, “Energy Efficiency Optimization For MISO SWIPT Systems With Zero-Forcing Beamforming”, **IEEE Transactions on Signal Processing**, Vol. 64, No. 4 pages 842-854, 2016
22. Alfredo Garcia and **Mingyi Hong**, “Efficient Rate Allocation in Wireless Networks Under Incomplete Information”, **IEEE Transactions on Automatic Control**, Vol. 61, No. 5, pages 1397 - 1402, 2016

23. Ruoyu Sun, **Mingyi Hong** and Zhi-Quan Luo, “Joint Downlink Base Station Association and Power Control for Max-Min Fairness Computation and Complexity”, **IEEE Journal on Selected Areas of Communications**, Vol. 33, No. 6, pages 1040-1054, 2015
24. Xiangfeng Wang, **Mingyi Hong**, Shiqian Ma, Zhi-Quan Luo, “Solving Multiple-Block Separable Convex Minimization Problems Using Two-Block Alternating Direction Method of Multipliers”, **Pacific Journal on Optimization**, Vol. 11, No. 4, pages 645 - 667, 2015
25. Zi Xu and **Mingyi Hong**, “Approximation Algorithm for A Mixed Binary Quadratically Constrained Quadratic Programming Problem”, **Pacific Journal on Optimization**, Vol. 11, No. 2, pages 239 - 255, 2015 (invited)
26. Tsung-Hui Chang, **Mingyi Hong** and Xiangfeng Wang, “Multi-Agent Distributed Optimization via Inexact Consensus ADM”, **IEEE Transactions on Signal Processing**, Vol. 63, No. 2, pages 482-497, 2015
27. M. Baligh, **M. Hong**, W.-C Liao, Z.-Q Luo, M. Razaviyayn, M. Sanjabi, and R. Sun, “Cross-Layer Provisioning of Future Cellular Networks”, **IEEE Signal Processing Magazine**, special issue on 5G revolution, Vol. 31, No. 6, pages 56-68, 2014
28. Wei-Cheng Liao, **Mingyi Hong**, Hamid Farmanba, Xu Li, Zhi-Quan Luo and Hang Zhang, “Min Flow Rate Maximization for Software Defined Radio Access Networks”, **IEEE Journal on Selected Areas in Communication**, special issue on 5G wireless networks, Vol. 23, No. 6, pages 1282-1294, 2014
29. Shuai Ma, **Mingyi Hong**, Enbin Song, Xiangfeng Wang and Dechun Sun, “Outage Constrained Robust Secure Transmission for MISO Wiretap Channel”, **IEEE Transactions on Wireless Communications**, Vol. 13, No. 10, pages 5558-5570, 2014
30. J. Joaquin Escudero Garzas, **Mingyi Hong**, Alfredo Garcia, and Ana Garcia-Armada, “Interference Pricing Mechanism for Downlink Multicell Coordinated Beamforming”, **IEEE Transactions on Communications**, Vol. 62, No. 6, pages 1871-1883, 2014
31. Zi Xu, **Mingyi Hong**, and Zhi-Quan Luo, “Semidefinite approximation for mixed binary quadratically constrained quadratic programs”, **SIAM Journal on Optimization**, Vol. 24, No. 3, pages, 1265 - 1293, 2014
32. Wei-Cheng Liao, **Mingyi Hong**, Ya-Feng Liu and Zhi-Quan Luo, “Base Station Activation and Linear Transceiver Design for Optimal Resource Management in Heterogeneous Networks”, **IEEE Transactions on Signal Processing**, Vol. 62, No. 15, pages 3939 - 3952, 2014
33. Meisam Razaviyayn, **Mingyi Hong** and Zhi-Quan Luo, “A Unified Convergence Analysis of Block Successive Minimization Methods for Nonsmooth Optimization”, **SIAM Journal on Optimization**. Vol. 23, No. 2, pages 1126 - 1153, 2013; **Finalist, Best Paper Prize for Young Researchers in Continuous Optimization, 2013**
34. Qiang Li, **Mingyi Hong**, Hoi-To Wai, Wing-Kin Ma, Ya-Feng Liu, and Zhi-Quan Luo, “Transmit Solutions for MIMO Wiretap Channels using Alternating Optimization and Water-Filling”, **IEEE Journal on Selected Areas in Communications**, special issues on Signal Processing Techniques for Wireless Physical Layer Security. Vol. 31, No. 9, pages 1714-1727, 2013
35. **Mingyi Hong**, Zi Xu, Meisam Razaviyayn, and Zhi-Quan Luo, “Joint User Grouping and Linear Virtual Beamforming: Complexity, Algorithms and Approximation Bounds”, **IEEE Journal on Selected Areas in Communications**, special issues on virtual MIMO systems, Vol. 31, No. 10, pages 2013 - 2027, 2013
36. Meisam Razaviyayn, **Mingyi Hong** and Zhi-Quan Luo, “Linear Transceiver Design for a MIMO Interfering Broadcast Channel Achieving Max-Min Fairness”, **Signal Processing**, special issue on sensor array processing, Vol. 93, No. 12, pages 3327 - 3340, 2013

37. **Mingyi Hong**, Alfredo Garcia, Jorge Barrera and Stephen Wilson, “Joint Access Point Selection and Power Allocation for Uplink Wireless Networks”, **IEEE Transactions on Signal Processing**, Vol. 61, No. 13, pages 3334-3347, 2013
38. **Mingyi Hong** and Zhi-Quan Luo, “Distributed Linear Precoder Optimization and Base Station Selection for an Uplink Heterogeneous Network”, **IEEE Transactions on Signal Processing**, Vol. 61, No. 12, pages 3214–3228, 2013
39. **Mingyi Hong**, Ruoyu Sun, Hadi Baligh and Zhi-Quan Luo, “Joint Base Station Clustering and Beamformer Design for Partial Coordinated Transmission in Heterogeneous Networks”, **IEEE Journal on Selected Areas in Communications**, special issues on Large-Scale multiple antenna systems, Vol. 31, No. 2, pages 226-240, 2013
40. Ya-Feng Liu, **Mingyi Hong**, Yu-Hong Dai, “Max-Min Fairness Linear Transceiver Design Problem for a Multi-User SIMO Interference Channel Is Polynomial Time Solvable”, **IEEE Signal Processing Letters**, Vol. 20, No. 1, pages 27-30, 2013
41. Alfredo Garcia, **Mingyi Hong** and Jorge Barrera, “Cap and Trade for Congestion Control”, **Dynamic Games and Applications**, Vol. 2, No. 3, pages 280-293, 2012.
42. **Mingyi Hong** and Alfredo Garcia, “Mechanism Design for Base Station Association and Resource Allocation in Downlink OFDMA Network”, **IEEE Journal on Selected Areas in Communications**, special issues on Game Theory for Communication Networks, Vol. 30, No. 11, pages 2238-2250, 2012
43. **Mingyi Hong** and Alfredo Garcia, “Averaged Iterative Water Filling Algorithm”, **IEEE Transactions on Signal Processing**, Vol. 59, No. 5, pages 2448-2454, 2011
44. **Mingyi Hong** and Alfredo Garcia, “Equilibrium Pricing of Interference in Cognitive Radio Networks”, **IEEE Transactions on Signal Processing**, Vol. 59, No. 12, pages 6058-6072, 2011
45. **Mingyi Hong**, Monica Bugallo and Petar Djuric, “Joint Model Selection and Parameter Estimation by Population Monte Carlo Simulation”, **IEEE Journal of Selected Topics in Signal Processing**, Vol. 4, No. 3, pages 526-539, 2010

Conference Papers

1. Mingyi Hong, Davood Hajinezhad and Ming-Min Zhao, “Prox-PDA: The Proximal Primal-Dual Algorithm for Fast Distributed Nonconvex Optimization and Learning Over Networks”, **Proc. ICML 2017 (acceptance rate %25.1)**
2. Bo Yang, Xiao Fu, Nicholas D. Sidiropoulos and Mingyi Hong, “Towards K-means-friendly Spaces: Simultaneous Deep Learning and Clustering”, **Proc. ICML 2017 (acceptance rate 25.1%)**
3. Davood Hajinezhad, Mingyi Hong, Tuo Zhao and Zhaoran Wang, “NESTT: A Nonconvex Primal-Dual Splitting Method for Distributed and Stochastic Optimization”, **Proc. NIPS 2016, (acceptance rate 22.7%)**
4. Chao Hu, Mingyi Hong and Ha-Lim Jeong “On-Board Analysis of Degradation Mechanisms of Lithium-Ion Battery using Differential Voltage Analysis”, Proc. ASME IDETC conference 2016
5. Xingguo Li, Tuo Zhao, Raman Aurora, Han Liu and Mingyi Hong, “An Improved Convergence Analysis of Cyclic Block Coordinate Descent-type Methods for Strongly Convex Minimization”, **Proc. AISTATS 2016, (acceptance rate 30.7%)**
6. Shengyu Zhu, Mingyi Hong, Biao Chen, “Quantized Consensus ADMM for Multi-Agent Distributed Optimization”, Proc. ICASSP 2016
7. Qingjiang Shi, Mingyi Hong, Enbin Song, Yunlong Cai, Weiqiang Xu, “A Penalty-BSUM approach for rate optimization in Full-Duplex MIMO Relay Networks with Relay Processing Delay”, Proc. ICASSP 2016

8. Davood Hajinezhad, Tsung-Hui Chang, Xiangfeng Wang, Qinagjiang Shi, Mingyi Hong, “Nonnegative Matrix Factorization using ADMM: Algorithm and Convergence Analysis”, Proc. ICASSP 2016
9. Tsung-Hui Chang, Mingyi Hong, Wei-Cheng Liao, Xiangfeng Wang, “Asynchronous Distributed Alternating Direction Method of Multipliers: Algorithm and Convergence Analysis”, Proc. ICASSP 2016
10. Davood Hajinezhad and Mingyi Hong, “Nonconvex Alternating Direction Method of Multipliers for Distributed Sparse Principal Component Analysis”, Proc. GlobalSIP 2015
11. Ruoyu Sun* and Mingyi Hong*, “Improved Iteration Complexity Bounds of Cyclic Block Coordinate Descent for Convex Problems”, **Proc. NIPS 2015** (*equal contribution, **acceptance rate %21.92**)
12. Wei-Cheng Liao, Mingyi Hong, Ivo Merks, Tao Zhang and Zhi-Quan Luo, “Incorporating Spatial Information into Optimal Binaural Noise Suppression Design for Hearing Aids”, Proc. ICASSP 2015
13. Hung-Wei Tseng, Mingyi Hong and Zhi-Quan Luo, “Combining Sparse NMF with Deep Neural Network: A New Classification Based Approach for Speech Enhancement”, Proc. ICASSP 2015
14. Wei-Cheng Liao, Mingyi Hong, Hamid Farmanbar and Zhi-Quan Luo, “Semi-Asynchronous Routing for Large-Scale Hierarchical Networks”, Proc. ICASSP 2015
15. Mingyi Hong, Zhi-Quan Luo and Meisam Razaviyayn, “Convergence Analysis of Alternating Direction Method of Multipliers for a Family of Nonconvex Problems”, Proc. ICASSP 2015
16. Meisam Razaviyayn, Mingyi Hong, Zhi-Quan Luo and Jong-Shi Pang, “Parallel Successive Convex Approximation for Nonsmooth Nonconvex Optimization”, **Proc. NIPS 2014**, (**acceptance rate %24.67**)
17. Mingyi Hong and Hao Zhu, “Power-Efficient Operation of Wireless Heterogeneous Networks using Smart Grids”, Proc. SmartGridComm, 2014
18. Mazair Sanjabi, Mingyi Hong, Meisam Razaviyayn and Zhi-Quan Luo, “Joint Base Station Clustering and Beamformer Design for Partial Coordinated Transmission using Statistical Channel State Information”, Proc. SPAWC 2014
19. Tsung-Hui Chang, Mingyi Hong and Xiangfeng Wang, “Multi-agent Distributed Large-Scale Optimization by Inexact Consensus Alternating Direction Method of Multipliers”, Proc. ICASSP 2014
20. Mingyi Hong, Tsung-Hui Chang, Xiangfeng Wang, Meisam Razaviyayn and Shiqian Ma, Zhi-Quan Luo, “A Block Coordinate Descent Method of Multipliers: Convergence Analysis and Applications”, Proc. ICASSP 2014
21. Xiangfeng Wang, Mingyi Hong, Tsung-Hui Chang, Meisam Razaviyayn, Zhi-Quan Luo, “Joint Day-Ahead Power Procurement and Load Scheduling Using Stochastic Alternating Direction Method of Multipliers”, Proc. ICASSP 2014
22. Wei-Cheng Liao, Mingyi Hong and Zhi-Quan Luo, “Max-Min Network Flow and Resource Allocation for Backhaul Constrained Heterogeneous Wireless Networks”, Proc. ICASSP 2014
23. Hung-Wei Tseng, Srikanth Vishnubhotla, Mingyi Hong, Jinjun Xiao, Xiangfeng Wang, Zhi-Quan Luo and Tao Zhang, “A Single Channel Speech Enhancement Approach by Combining Statistical Criterion and Multi-Frame Sparse Dictionary Learning”, InterSpeech 2013
24. Wei-Cheng Liao, Mingyi Hong and Zhi-Quan Luo, “Base Station Activation and Linear Transceiver Design for Utility Maximization in Heterogeneous Networks”, Proc. ICASSP 2013
25. Shu-Hsien Chu, Mingyi Hong, Zhi-Quan Luo, Kelly Fitz, Martin McKinney, Tao Zhang, “Derivative-Free Optimization Of Hearing Aid Parameters”, Proc. ICASSP 2013

26. Qiang Li, Mingyi Hong, Hoi-To Wai, Wing-Kin Ma, Ya-Feng Liu and Zhi-Quan Luo, “An Alternating Optimization Algorithm for the MIMO Secrecy Capacity Problem under Sum Power and Per-Antenna Power Constraint”, Proc. ICASSP 2013
27. Hung-Wei Tseng, Srikanth Vishnubhotla, Mingyi Hong, Jinjun Xiao, Zhi-Quan Luo and Tao Zhang, “Single channel speech denoising using Wiener plus dictionary learning approach”, Proc. ICASSP 2013
28. Mingyi Hong, Meisam Razaviyayn, Ruo-Yu Sun and Zhi-Quan Luo, “Joint Transceiver Design and Base Station Clustering for Heterogeneous Networks”, Proc Asilomar Conference on Signals, Systems and Computers, 2012
29. Qingjiang Shi, Meisam Razaviyayn, Mingyi Hong and Zhi-Quan Luo, “SINR Constrained Beamforming for a MIMO Multi-user Downlink System”, Proc. Proc Asilomar Conference on Signals, Systems and Computers, 2012
30. Jorge Barrera, Mingyi Hong and Alfredo Garcia, “Truthful Multi-unit Conflictive Auction For Spectrum”, Proc. IEEE Globecom 2013
31. Ruoyu Sun, Mingyi Hong and Zhi-Quan Luo, “Optimal Joint Base Station Assignment and Power Allocation in a Multiuser SISO Network”, Proc. IEEE SPAWC 2012
32. Mingyi Hong and Zhi-Quan Luo, “Joint Linear Precoder Optimization and Base Station Selection for an Uplink MIMO Network: A Game Theoretic Approach”, Proc. IEEE ICASSP 2012
33. Meisam Razaviyayn, Mingyi Hong and Zhi-Quan Luo, “Linear Transceiver Design for a MIMO Interfering Broadcast Channel Achieving Max-Min Fairness”, Proc. Asilomar Conference on Signals Systems and Computers, 2011
34. Mingyi Hong, Alfredo Garcia and Jorge Barrera, “Joint Distributed Access Point Selection and Power Allocation in Cognitive Radio Networks”, **Proc. IEEE INFOCOM**, 2011 (**acceptance rate 15.96%**)
35. Zhiheng Xie, Mingyi Hong, Hengchang Liu and John Stankovic, “Quantitative Uncertainty-Based Incremental Localization and Anchor Selection In Wireless Sensor Networks”, Proc. ACM MSWiM 2011 (**acceptance rate 30%**)
36. Chenyang Li, Mingyi Hong, Randy Cogill and Alfredo Garcia, “An Adaptive Online Ad Auction Scoring Algorithm for Search Engine Revenue Maximization”, INFORMS 2011
37. Mingyi Hong and Alfredo Garcia, Competitive Sharing of the Spectrum in Cognitive Radio Networks: A Market Equilibrium Framework”, Proc. IEEE/ACM WiOPT 2010 (**acceptance rate 33.04%**)
38. Monica Bugallo, Mingyi Hong and Petar Djuric, “Marginalized Population Monte Carlo”, Proc. IEEE ICASSP 2009

INVITED TALKS

1. “Recent Advancement in Nonconvex First-Order Primal Dual Methods: From Theory to Applications”, Statistical Machine Learning Group, *Princeton University*, August 2016
2. “Does ADMM Converge for Nonconvex Problems?”, *ICCOPT 2016, Japan*, August 2016
3. “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, The Department of Automation, *University of Science and Technology of China*, June 2016
4. “Modern first-order methods for large-scale optimization”, *Modern Optimization and Application (MOA)*, invited short course, June 2016
5. “Iteration Complexity Analysis of Block Coordinate Descent Method”, Math Department, *The University of Alabama*, March 2016
6. “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, ECEE Department, *Arizona State University*, February 2016

7. “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, CS Department, *The Johns Hopkins University*, December 2015
8. “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, CS Department, *University of Iowa*, October 2015
9. “Stochastic Proximal Gradient Consensus Over Time-Varying Multi-Agent Network”, *INFORMS*, Philadelphia, 2015
10. “Iteration Complexity Analysis of Block Coordinate Descent Method”, *INFORMS*, Philadelphia, 2015
11. “Stochastic Proximal Gradient Consensus Over Time-Varying Multi-Agent Network”, *Allerton 2015*
12. “Flexible ADMM for Block-Structured Convex and Nonconvex Optimization”, *ICIAM*, Beijing, 2015
13. “A Unified Algorithmic Framework for Block-Structured Optimization Involving Big Data”, ISEE Department, *Zhejiang University*, August 2015
14. “Iteration Complexity Analysis of Block Coordinate Descent Method”, The State Key Laboratory of Scientific and Engineering Computing, *the Chinese Academy of Sciences*, July, 2015
15. “Convergence Analysis of Alternating Direction Method of Multipliers for a Family of Nonconvex Problems”, *ISMP*, Pittsburgh 2015
16. “Flexible ADMM for Block-Structured Convex and Nonconvex Optimization”, *University of Houston*, November, 2014
17. “The Block Successive Upper-Bound Minimization Methods of Multipliers”, *INFORMS*, San Francisco, November, 2014
18. “Iteration Complexity Analysis of Block Coordinate Descent Method”, *SIAM conference on Optimization*, San Diego, May, 2014
19. “Provision of Next-Generation Wireless Networks: A Large-Scale Optimization Approach”, *Oregon State University*, Corvallis, March, 2014
20. “Large-Scale Structured Optimization: Algorithms and Applications”, *Iowa State University*, Ames, February, 2014
21. “Large-Scale Structured Optimization: Algorithms and Applications”, *NJIT*, Newark, February, 2014
22. “Large-Scale Structured Optimization: Algorithms and Applications”, *University of Massachusetts*, February, 2014
23. “Large-Scale Structured Optimization: Algorithms and Applications”, *Texas Tech University*, Lubbock, January, 2014
24. “Base Station Activation and Linear Transceiver Design for Optimal Resource Management in Heterogeneous Networks”, IMSE summer school on multi-agent systems, *University of Illinois at Urbana-Champaign*, Aug. 2013
25. “Decomposition by Successive Convex Approximation: A Unifying Approach for Linear Transceiver Design in Heterogeneous Networks”, *Zhejiang University*, June. 2013
26. “Large-Scale Structured Optimization: Algorithms and Applications”, Special Seminar, *University of Virginia*, April 2013
27. “Joint Base Station Clustering and Transceiver Design in Heterogeneous Networks”, *Asilomar Conference on Signal, System and Computers*, November 2013
28. “Decomposition by Successive Convex Approximation: A Unifying Approach for Linear Transceiver Design in Heterogeneous Networks”, Communication, Control and Signal Processing Seminar, Digital Technology Center, University of Minnesota, October 2012

29. “A Primal-Dual Algorithm for Simulation-based Computation of Cournot Equilibrium in Electricity Market”, *International Symposium for Mathematical Programming (ISMP)*, Chicago, August 2009

**POST
DOCTORAL
SCHOLAR
ADVISED**

- Dr. Qingjiang Shi
Iowa State University, IMSE Department
From Jan 2016 – March 2017
Associate Editor for IEEE Transactions on Signal Processing, 2017 – 2020

**GRADUATE
STUDENTS
ADVISED**

- Davood Hajinezhad
Iowa State University, IMSE Department
Ph.D. expected December 2017
Recipient of **Graduate College’s Research Excellence Award** at Iowa State
- Songtao Lu
Iowa State University, ECE Department
Ph.D. expected June 2017
Joint advised with Zhengdao Wang
Recipient of **Graduate College’s Research Excellence Award** at Iowa State
- Haoran Sun
Iowa State University, IMSE Department
Ph.D. expected June 2020
Recipient of **Presidential Fellowship** at Iowa State
- Yijian Zhang
Iowa State University, IMSE Department
Ph.D. expected June 2020
- Mostafa Amin-Naseri
Iowa State University, IMSE Department
Ph.D. expected June 2020
Joint advised with Stephen Gilbert
- Xiangyi Chen
Iowa State University, ECE Department
M. Eng. expected June 2017

**UNDERGRADS
ADVISED**

- Andre Fristo
Iowa State University, IMSE Department
B. Sc., expected June 2018
- Chase Grimm
Iowa State University, IMSE Department
B. Sc., expected June 2018

**Departmental
Committee**

- Curriculum Committee, IMSE Department, Iowa State University (2014 - 2017)
- Faculty Search Committee, IMSE Department, Iowa State University (2016 - 2017)

**PROFESSIONAL
MEMBERSHIP
AND SERVICES**

- IEEE, IEEE Signal Processing Society member
- INFORMS, SIAM member
- Member, IEEE Signal Processing Society SPCOM Technical Committee (2017-2020)
- Member, IEEE Signal Processing Society MLSP Technical Committee (2018-2021)
- Session Chair
 - INFORMS 2015, 2016
 - Asilomar 2016
- Technical Program Co-Chair
 - GlobalSIP 2016, 2017, Symposium on Distributed Optimization and Resource Management over Networks
- TPC member
 - IEEE SmartGridComm 2014, IEEE GlobalSIP 2015, IEEE GameNets 2016, AIS-TATS 2017
- Peer Review Activities
 - IEEE Transactions on Automatic Control
 - IEEE Transactions on Wireless Communications
 - IEEE Transactions on Communications
 - IEEE Transactions on Mobile Computing
 - IEEE Journal on Selected Areas in Communications
 - IEEE Transactions on Vehicular Technology
 - IEEE Transactions on Signal Processing
 - IEEE Transactions on Information Theory
 - IEEE Transactions on Information Forensics and Security
 - IEEE Signal Processing Letters
 - IEEE Communication Letters
 - IEEE Wireless Communication Letters
 - IEEE Access
 - IEEE Transactions on Control of Network Systems
 - IEEE Transactions on Networking
 - IEEE Network Magazine
 - EURASIP Journal on Wireless Communications and Networking
 - SCIENCE CHINA Mathematics
 - Mathematical Programming
 - SIAM Journal on Optimization
 - Optimization Methods and Software
 - Operations Research
 - Computational Optimization and Application
 - IEEE Access

- IEEE Transactions on Control of Network Systems
- IEEE Transactions on Networking
- Mathematics of Operations Research
- Journal of Scientific Computing
- Journal of Global Optimization